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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/791,175

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EXAMINER

LEE, SIU M

ART UNIT

PAPER NUMBER

2611

MAIL DATE

DELIVERY MODE

05/01/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/791,175

Applicant(s)

CRANFORD ET AL.

Examiner

Siu M. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 13, 14 and 16 is/are rejected.
- 7) ☒ Claim(s) 9-12, 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "38" has been used to designate both the "OR" block in figure 4 and the "adjust circuit" in figure 4. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 3-6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not

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described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 3 recites the limitation "overhang of the first rotate up and rotate down signals". There is no definition of the limitation "overhang" in the disclosure.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 7 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Usui (US 6,269,128 B1).

Usui discloses circuit (figure 2) comprising:

a up/down counter (up/down counter 211 in figure 2) for counting signals for phase adjustments by a clock-data-recovery loop of a serial receiver (the up/down counter 211 increments or decrements a counter with each reference clock depending on the up/down signal UD and the up/down enable signal UDEN from the lead/lag detector 210 in figure 2, column 5, lines 9-11); and

an adder (adder 213 in figure 2) coupled to the up/down counter (adder 213 is coupled to the up/down counter 211) that outputs accumulated data indicative of a trend in the phase adjustments (the respective output counters of the up/down counter 211 and the self running up counter 212 are added by the full adder 213 to produce the

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symbol clock CLK, column 5, lines 44-46, as the up/down counter is accumulating the up and down signal, the output of the adder 213 is inherent an indicative of the trend in the phase adjustment).

(2) Regarding claim 8:

Usui further discloses that the signals comprise rotate up and rotate down signals (the lead/lag detector 210 determines whether the phase signal SPH leads or lags behind the corresponding ideal phase, when leading, the lead/lag detector 210 sets an up/down signal UD to "1" and an up/down enable signal UDEN to "1" and, when lagging, the up/down signal UD to "0" and the up/down enable signal UDEN to "1", column 4, lines 58-63).

(3) Regarding claim 13:

Usui discloses a method comprising:

monitoring trends of phase adjusts of a clock-data-recovery circuit to a reference clock of a serial receiver (the up/down counter 211 in figure 2 monitor the up/down signal (UD) and up/down enable signal (UDEN) output from the lead/lag detector 210, the up/down counter 211 increments or decrements a counter with each reference clock, column 4, line 66 – column 5, lines 11); and

adapting the phase adjusts to create future adjusts based on previous adjusts (the respective output counter of the up/down counter 211 and the self-running counter 212 are added by the full adder 213 to produce the symbol clock CLK, column 5, lines 44-46).

(4) Regarding claim 14:

Usui further discloses that the step of monitoring comprises utilizing an up-down counter (up/down counter 211 in figure 2) and an adder (adder 213 in figure 2) to accumulate phase adjust data from the phase adjust (adder 213 is adding the accumulated phase adjust from the up/down counter 211, column 5, lines 44-46).

(5) Regarding claim 16:

Usui discloses wherein the phase adjust further comprise rotate up and rotate down signal for phase rotation in the clock-data-recovery circuit (the combination of the up/down signal (UD) and the up/down enable signal (UDEN) indicates a rotate up and rotate down (lead or lag) of the adjust signal, column 4, lines 58-65).

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Makarov (US 7,075,948 B2).

(1) Regarding claim 1:

Makarov discloses a circuit comprising:

a controller (counter-clockwise transition detector 102 and the clockwise transition detector 104 in figure 5) for generating first signals for phase adjusts in a

receiver link to adapt to frequency offsets (counter-clockwise transition detector 102 and the clockwise transition detector 104 in figure 5 output a signal D (D_{ccw} for the detector 102 and D_{cw} for the detector 104) when active indicates a detected occurrence of a transition event for the received signal, column 6, lines 23-38); and

an adjust circuit coupled to the controller (counter 108 and processing component 112 in figure 5), the adjust circuit for detecting trends in the signals to generate second signals, the second signals improving a rate of compensation for the frequency offsets by the phase adjusts (the counter 108 includes a counter-clockwise accumulator 108(1) (counting the active signals D_{ccw} over a given time period) and a clockwise accumulator 108(2) (counting the active signals D_{cw} over the same given time period), processing component 112 receives the counts from counter 108 and mathematically operates on those counts to determine the magnitude and sign of the frequency offset, column 6, line 39-column 7, line 3).

(2) Regarding claim 2:

Makarov discloses wherein the first signal comprises a first rotate up (counter clockwise signal (D_{ccw}) and the clockwise signal (D_{cw}) from the CCW detector 102 and CW detector 104 in figure 5).

(3) Regarding claim 3 and 4: (since there is no definition of the term "overhang" in the disclosure, the examiner interpreted the claim without the limitation "overhang")

Makarov discloses that the adjust circuit monitors the first rotate up and rotate down signals (the counter 108 in figure 5 accumulates the first rotate up (D_{ccw}) and first rotate down signal (D_{cw}), column 6, lines 39-43).

Allowable Subject Matter

8. Claims 9, 10, 11, 12, 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Spanker et al. (US 6,959,064 B2) discloses a clock recovery PLL. Underhill (US 4,536,718) discloses a jitter reduction circuit for frequency synthesizer. Schmitz et al. (US 2004/0208270 A1) discloses a clock data recovering system with external early/late input. Usui (US 6,615,060 B1) discloses communication device effectively controlling power supply, method of controlling power supply, and medium.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Siu M. Lee whose telephone number is (571) 270-1083. The examiner can normally be reached on Mon-Fri, 7:30-4:00 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Siu M. Lee
4/17/2007


CHIEH M. FAN
SUPERVISORY PATENT EXAMINER